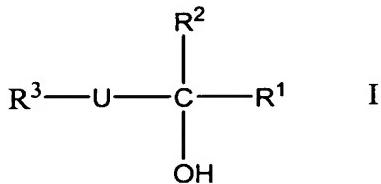


IN THE CLAIMS

1-14 (Cancelled)

15 (New): A process for the preparation of a compound of the general formula I by subjecting a compound of general formula V to an electrochemical reaction with an alcohol of the general formula II in the presence of an auxiliary electrolyte and catalytic amounts of a metal salt (S) derived from a metal from sub-groups (groups) Ib (11), IIB (12), VIb (6), and VIIIb (8, 9, 10) of the periodic chart or from lead, tin or rhenium, wherein the compound of general formula I is:



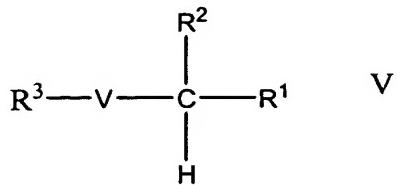
where  $R^1$ ,  $R^2$ ,  $R^3$  are each independently hydrogen,  $C_1$ - to  $C_{20}$ -alkyl,  $C_2$ - to  $C_{20}$ -alkenyl,  $C_2$ - to  $C_{20}$ -alkynyl,  $C_3$ - to  $C_{12}$ -cycloalkyl,  $C_4$ - to  $C_{20}$ -cycloalkyl-alkyl,  $C_1$ - to  $C_{20}$ -hydroxyalkyl, or aryl or  $C_7$ - to  $C_{20}$ -arylalkyl which is unsubstituted or substituted by  $C_1$ - to  $C_8$ -alkyl,  $C_1$ - to  $C_8$ -alkoxy, halogen,  $C_1$ - to  $C_4$ -haloalkyl,  $C_1$ - to  $C_4$ -haloalkoxy, phenyl, phenoxy, halophenyl, halophenoxy, carboxyl,  $C_2$ - to  $C_8$ -alkoxycarbonyl or cyano, or  $R^1$  and  $R^2$  or  $R^3$  together are a  $C_2$ - to  $C_9$ -alkandiyl unit which is unsubstituted, monosubstituted or disubstituted by  $C_1$ - to  $C_8$ -alkyl,  $C_1$ - to  $C_8$ -alkoxy and/or halogen and in which one or two methyl groups may also be replaced by a  $(CH=CH)$  unit and  $R^3$  is additionally an acetylated carbonyl group in which the alkoxy groups are derived from an alcohol of the general formula II:



where  $R^4$  is  $C_1$ - to  $C_6$ -alkyl, and

U is an acetylated carbonyl group in which the alkoxy groups are derived from an alcohol of the general formula II; and

wherein the compound of general formula V is:

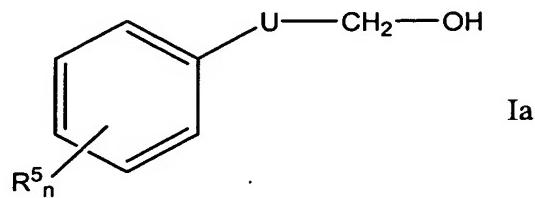


wherein:

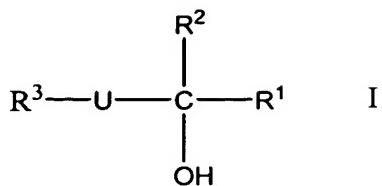
V is a carbonyl group, or an acetylated carbonyl group having C<sub>1</sub>- to C<sub>6</sub>-alkoxy,

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Contd*  
R<sup>1</sup>, R<sup>2</sup> and R<sup>3</sup> are hydrogen, C<sub>1</sub>- to C<sub>20</sub>-alkyl, C<sub>2</sub>- to C<sub>20</sub>-alkenyl, C<sub>2</sub>- to C<sub>20</sub>-alkynyl, C<sub>3</sub>- to C<sub>12</sub>-cycloalkyl, C<sub>4</sub>- to C<sub>20</sub>-cycloalkyl-alkyl, C<sub>1</sub>- to C<sub>20</sub>-hydroxyalkyl, or aryl or C<sub>7</sub>- to C<sub>20</sub>-arylalkyl which is unsubstituted or substituted by C<sub>1</sub>- to C<sub>8</sub>-alkyl, C<sub>1</sub>- to C<sub>8</sub>-alkoxy, halogen, C<sub>1</sub>- to C<sub>4</sub>-haloalkyl, C<sub>1</sub>- to C<sub>4</sub>-haloalkoxy, phenyl, phenoxy, halophenyl, halophenoxy, carboxyl, C<sub>2</sub>- to C<sub>8</sub>-alkoxycarbonyl or cyano, or R<sup>1</sup> and R<sup>2</sup> or R<sup>3</sup> together are a C<sub>2</sub>- to C<sub>9</sub>-alkandiyl unit which is unsubstituted, monosubstituted or disubstituted by C<sub>1</sub>- to C<sub>8</sub>-alkyl, C<sub>1</sub>- to C<sub>8</sub>-alkoxy and/or halogen and in which one or two methyl groups may also be replaced by a (CH=CH) unit and R<sup>3</sup> is additionally an acetylated carbonyl group having C<sub>1</sub>- to C<sub>6</sub>-alkoxy.

16 (New): The process of Claim 15 for the preparation of a compound of the general formula Ia:



where U is as defined under the formula I,



n is 0, 1, 2 or 3, and

R<sup>5</sup> is C<sub>1</sub>- to C<sub>8</sub>-alkyl, C<sub>1</sub>- to C<sub>8</sub>-alkoxy, halogen, C<sub>1</sub>- to C<sub>4</sub>-haloalkyl, C<sub>1</sub>- to C<sub>4</sub>-haloalkoxy, phenyl, phenoxy, halophenyl, halophenoxy, carboxyl, C<sub>2</sub>- to C<sub>8</sub>-alkoxycarbonyl or cyano.

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*Contd* 17 (New): The process of Claim 16, where the compound of the general formula Ia

is 2-phenyl-2,2-dimethoxyethanol.

18 (New): The process of Claim 15, where the compound of the general formula I is a compound of the general formula Ib:



where m is a number from 1 to 10, and R<sup>4</sup> is as defined under the formula II, and the compound of the general formula V is a compound of the general formula Vb:



19 (New): The process of Claim 15, where the compound of the formula I is 2,2,3,3-tetramethoxypropanol, and the starting compound employed is methylglyoxal dimethyl acetal.

20 (New): The process of Claim 15, where the anions of the metal salt (S) are derived from a mineral acid.

21 (New): The process of Claim 15, where the anions of the metal salt (S) are phosphate, sulfate, nitrate, perchlorate or halide.

22 (New): The process of Claim 15, where the cations of the metal salt (S) are iron, nickel, platinum, palladium, cobalt, zinc, silver or copper.

23 (New): The process of Claim 15, where the electrolysis liquid contains from 1 to 1,000 ppm by weight of metal ions of the metal salt (S), based on the total amount of electrolysis liquid.

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Contd*  
24 (New): The process of Claim 15, where the electrolysis liquid contains a halogen-containing auxiliary electrolyte.

25 (New): The process of Claim 15, where the electrolysis liquid consists essentially of:

a starting compound of the general formula V,  
an alcohol of the general formula II,  
a halogen-containing auxiliary electrolyte,  
a catalytic amount of the metal salt (S),  
optionally the desired products of the general formulae I,  
optionally other by-products of electrolysis which are derived from the compounds of the general formulae I and V, and  
optionally, other conventional co-solvents.

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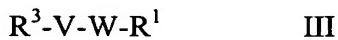
26 (New): The process of Claim 15, wherein  
the proportion of the starting compound(s) and product(s) of the general formulae I  
and V and of the other by-products of electrolysis from the abovementioned compound(s) is  
from 1 to 70% by weight,  
the proportion of the alcohol of the general formula II is from 14.9 to 94.9% by  
weight,  
the proportion of auxiliary electrolyte is from 0.1 to 5% by weight, and  
the proportion of any co-solvents present is from 0 to 70% by weight  
based on the electrolysis liquid.

27 (New): The process of Claim 15, wherein the electrolysis is carried out in an  
undivided electrolysis cell.

28 (New): The process of Claim 15, where the anodes employed are made of noble  
metals, noble-metal oxides, graphite or carbon materials, and the cathodes employed are  
made of iron, steel, nickel, zinc, noble metals, graphite or carbon materials.

29 (New): A process for preparing a compound of general formula III by subjecting a  
compound of general formula Va to an electrochemical reaction with an alcohol of the  
general formula II in the presence of an auxiliary electrolyte and a catalytic amount of a metal  
salt (S) derived from a metal from sub-groups (groups) Ib (11), IIB (12), VIIb (6), and VIIIb  
(8, 9, 10) of the periodic chart or from lead, tin or rhenium;

wherein the compound of general formula III is:

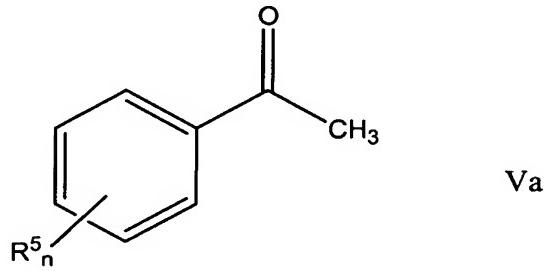


wherein  $R^1$  is hydrogen, and

$R^3$  is exclusively aryl which is unsubstituted, or substituted by C<sub>1</sub>- to C<sub>8</sub>-alkyl, C<sub>1</sub>- to C<sub>8</sub>-alkoxy, halogen, C<sub>1</sub>- to C<sub>4</sub>-haloalkyl, C<sub>1</sub>- to C<sub>4</sub>-haloalkoxy, phenyl, phenoxy, halophenyl, halophenoxy, carboxyl, C<sub>2</sub>- to C<sub>8</sub>-alkoxycarbonyl or cyano; and

V and W are independently a carbonyl group, or an acetylated carbonyl group having C<sub>1</sub>- to C<sub>6</sub>-alkoxy, with the proviso that one of the groups V and W is a carbonyl group and the other is an acetylated carbonyl group; and

wherein the compound of general formula Va is:

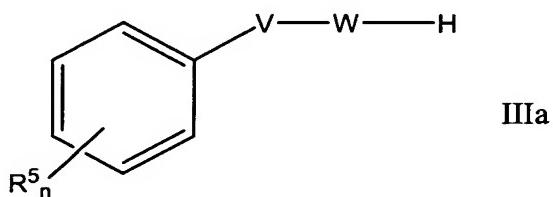


wherein:

$R^5$  is C<sub>1</sub>- to C<sub>8</sub>-alkyl, C<sub>1</sub>- to C<sub>8</sub>-alkoxy, halogen, C<sub>1</sub>- to C<sub>4</sub>-haloalkyl, C<sub>1</sub>- to C<sub>4</sub>-haloalkoxy, phenyl, phenoxy, halophenyl, halophenoxy, carboxyl, C<sub>2</sub>- to C<sub>8</sub>-alkoxycarbonyl or cyano, and

n is 0, 1, 2 or 3.

30 (New): The process of Claim 29 for the preparation of a compound of the general formula IIIa:



where n, V, W and  $R^5$  are as defined under formula Ia or III.

31 (New): The process of Claim 30, where the compound of the general formula IIIa

is 2-phenyl-2,2-dimethoxyacetaldehyde or 2-phenylglyoxal dimethyl acetal.

32 (New): The process of Claim 29, where the anions of the metal salt (S) are derived from a mineral acid.

33 (New): The process of Claim 29, where the anions of the metal salt (S) are phosphate, sulfate, nitrate, perchlorate or halide.

34 (New): The process of Claim 29, where the cations of the metal salt (S) are iron, nickel, platinum, palladium, cobalt, zinc, silver or copper.

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35 (New): The process of Claim 29, where the electrolysis liquid contains from 1 to 1,000 ppm by weight of metal ions of the metal salt (S), based on the total amount of electrolysis liquid.

36 (New): The process of Claim 29, where the electrolysis liquid contains a halogen-containing auxiliary electrolyte.

37 (New): The process of Claim 29, where the electrolysis liquid consists essentially of:

a starting compound of the general formula V,

an alcohol of the general formula II,

a halogen-containing auxiliary electrolyte,

a catalytic amount of the metal salt (S),

optionally the desired products of the general formulae I,

optionally other by-products of electrolysis which are derived from the compounds of the general formulae III and V, and

optionally, other conventional co-solvents.

38 (New): The process of Claim 29, wherein  
the proportion of the starting compound(s) and product(s) of the general formulae III and V and of the other by-products of electrolysis from the above mentioned compound(s) is from 1 to 70% by weight,

the proportion of the alcohol of the general formula II is from 14.9 to 94.9% by weight,  
the proportion of auxiliary electrolyte is from 0.1 to 5% by weight, and  
the proportion of any co-solvents present is from 0 to 70% by weight  
based on the electrolysis liquid.

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contd*

39 (New): The process of Claim 29, wherein the electrolysis is carried out in an undivided electrolysis cell.

40 (New): The process of Claim 29, where the anodes employed are made of noble metals, noble-metal oxides, graphite or carbon materials, and the cathodes employed are made of iron, steel, nickel, zinc, noble metals, graphite or carbon materials.

41 (New): A process for preparing a compound of the general formula IV by subjecting a compound of general formula Vb to an electrochemical reaction with an alcohol of the general formula II in the presence of an auxiliary electrolyte and a catalytic amount of a metal salt (S) derived from a metal sub-groups (groups) Ib (11), IIB (12), VIb (6), and VIIIb (8, 9, 10) of the periodic chart or from lead, tin or rhenium;

wherein the compound of general formula IV is:



wherein:

*B5 Cont'd*  
 $R^3$  is exclusively aryl which is unsubstituted, or substituted by C<sub>1</sub>- to C<sub>8</sub>-alkyl, C<sub>1</sub>- to C<sub>8</sub>-alkoxy, halogen, C<sub>1</sub>- to C<sub>4</sub>-haloalkyl, C<sub>1</sub>- to C<sub>4</sub>-haloalkoxy, phenyl, phenoxy, halophenyl, halophenoxy, carboxyl, C<sub>2</sub>- to C<sub>8</sub>-alkoxycarbonyl or cyano;

$R^4$  is C<sub>1</sub>- to C<sub>6</sub>-alkyl; and

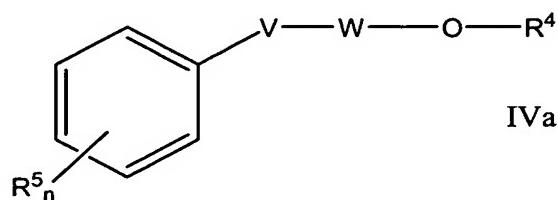
V and W are independently a carbonyl group, or an acetylated carbonyl group having C<sub>1</sub>- to C<sub>6</sub>-alkoxy, with the proviso that one of the groups V and W is a carbonyl group and the other is an acetylated carbonyl group;

wherein the compound of general formula Vb is:

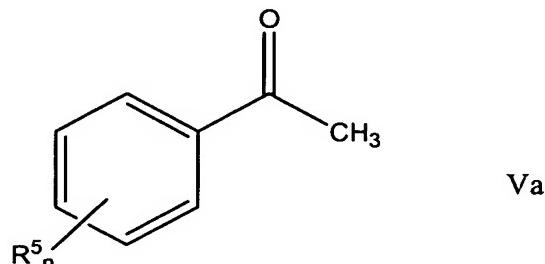


wherein m is 1, 2, 3, 4, 5, 6, 7, 8, 9 or 10.

42 (New): The process of Claim 41 for the preparation of a compound of the general formula IVa:



where n, V, W, R<sup>4</sup> and R<sup>5</sup> are as defined under the formula Ia or IIIa, by employing as a starting compound of the general formula V, a compound of the general formula Va,



where n and R<sup>5</sup> are as defined under the formula Ia.

43 (New): The process of Claim 42, where the compound of the general formula IVa is phenylglyoxylic acid methyl orthoester, and the compound of the general formula Va is acetophenone.

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44 (New): The process of Claim 41, where the anions of the metal salt (S) are derived from a mineral acid.

45 (New): The process of Claim 41, where the anions of the metal salt (S) are phosphate, sulfate, nitrate, perchlorate or halide.

46 (New): The process of Claim 41, where the cations of the metal salt (S) are iron, nickel, platinum, palladium, cobalt, zinc, silver or copper.

47 (New): The process of Claim 41, where the electrolysis liquid contains from 1 to 1,000 ppm by weight of metal ions of the metal salt (S), based on the total amount of electrolysis liquid.

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Contd*

48 (New): The process of Claim 41, where the electrolysis liquid contains a halogen-containing auxiliary electrolyte.

49 (New): The process of Claim 41, where the electrolysis liquid consists essentially of:

a starting compound of the general formula V,

an alcohol of the general formula II,

a halogen-containing auxiliary electrolyte,

a catalytic amount of the metal salt (S),

optionally the desired products of the general formulae IV

optionally other by-products of electrolysis which are derived from the compounds of the general formulae IV and V, and

optionally, other conventional co-solvents.

50 (New): The process of Claim 41, wherein

the proportion of the starting compound(s) and product(s) of the general formulae IV and V and of the other by-products of electrolysis from the above mentioned compound(s) is from 1 to 70% by weight,

the proportion of the alcohol of the general formula II is from 14.9 to 94.9% by weight,

the proportion of auxiliary electrolyte is from 0.1 to 5% by weight, and

the proportion of any co-solvents present is from 0 to 70% by weight

based on the electrolysis liquid.

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*contd*

51 (New): The process of Claim 41, wherein the electrolysis is carried out in an undivided electrolysis cell.

52 (New): The process of Claim 41, where the anodes employed are made of noble metals, noble-metal oxides, graphite or carbon materials, and the cathodes employed are made of iron, steel, nickel, zinc, noble metals, graphite or carbon materials.

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